What is claimed is:

1. A method for generating a timeout signal, comprising:

charging a timing capacitor using a first reference voltage that is temperature independent;

changing the level of the charge of the timing capacitor using a first current source that has a temperature coefficient of a first polarity;

changing the state of the timeout signal at a first time in response to initiating the changing of the level of the charge of the timing capacitor; and

comparing the voltage of the timing capacitor such that the state of the timeout signal changes at a second time in response to the voltage of the timing capacitor reaching a second reference voltage having a temperature coefficient of a second polarity that is the opposite of the first polarity, wherein the first and second polarities are related such that the duration from the first time to the second time is independent of temperature in the first order.

2. The method of claim 1, wherein the first reference voltage is generated by a bandgap reference voltage generator.

3. The method of claim 1, wherein the second reference voltage is generated by applying a PTAT-generated current to a PN junction.

4. The method of claim 1, wherein the first current source is a nanoamp-range PTAT current source.

5. The method of claim 4, wherein the first current source comprises Kohm-range resistors, through which resistors the level of the charge of the timing capacitor is discharged.

6. The method of claim 1, wherein the first temperature coefficient polarity is positive, and the second temperature coefficient polarity is negative.

7. A timeout signal generator circuit, comprising:

means for charging a timing capacitor, wherein the means for charging comprise a first reference voltage that is temperature independent;

means for changing the level of the charge of the timing capacitor, wherein the means for changing the level of the charge comprise a first current source that has a temperature coefficient of a first polarity;

means for changing the state of the timeout signal at a first time in response to initiating the changing of the level of the charge of the timing capacitor; and

means for comparing the voltage of the timing capacitor such that the state of the timeout signal changes at a second time in response to the voltage of the timing capacitor reaching a second reference voltage that has a temperature coefficient of a second polarity that is the opposite of the first polarity, wherein the first and second polarities are related such that the duration from the first time to the second time is independent of temperature in the first order.

8. The circuit of claim 7, wherein the first reference voltage is generated by a bandgap reference voltage generator.

9. The circuit of claim 7, wherein the second reference voltage is generated by applying a PTAT-generated current to a PN junction.

10. The circuit of claim 7, wherein the first current source is a nanoamp-range PTAT current source.

11. The circuit of claim 10, wherein the first current source comprises Kohm-range resistors, through which resistors the level of the charge of the timing capacitor is discharged.

12. The circuit of claim 7, wherein the first temperature coefficient polarity is positive, and the second temperature coefficient polarity is negative.

13. A timeout signal generator circuit, comprising:

a switch that is arranged to couple a first reference voltage that is temperature independent to a timing capacitor such that the timing capacitor is charged to the first reference voltage in response to the switch being closed;

a first current source having a temperature coefficient of a first polarity that is configured to discharge the timing capacitor in response to the switch being opened;

a second current source that is configured to produce a second reference voltage across a PN junction such that the second reference voltage has a temperature coefficient that is opposite of the first polarity; and

a comparator that is arranged to change the state of the timeout signal at a first time in response to the switch being closed and that is further arranged to change the state of the timeout signal at a second time in response to the voltage of the timing capacitor falling below the second reference voltage.

14. The circuit of claim 13, wherein the first reference voltage is generated by a bandgap reference voltage generator.

15. The circuit of claim 13, wherein the second current source is a PTAT current source.

16. The circuit of claim 13, wherein the first current source is a nanoamp-range PTAT current source.

17. The circuit of claim 16, wherein the first current source comprises Kohm-range resistors, through which resistors the timing capacitor is discharged.

18. The circuit of claim 13, wherein the first temperature coefficient polarity is positive, and the second temperature coefficient polarity is negative.

19. The circuit of claim 13, wherein the PTAT generator does not comprise resistors having a value of greater than 100 Kohms.